

a feedbunk reading computer system, associated with [installed onboard] a feedbunk reading vehicle transportable to [each said] animal pens in said feedlot, said feedbunk reading computer system including [means] mechanisms for receiving, storing and displaying [said] animal health data and feed ration dispensed data;

the feedbunk reading computer system further including mechanisms [a means] for producing, storing and displaying feed ration delivery data, said feed ration delivery data specifying the assigned amount of feed ration to be delivered to the feedbunks associated with a plurality of animal pens along a feeding route [during a specified number of feeding cycles to be executed] within a predetermined time period, and said feed ration dispensed data indicating the actual amount of feed ration delivered to the feedbunks of said animal pens during [each said specified feeding cycle] the predetermined time period;

a plurality of feed delivery vehicles each [having] being associated with a feed delivery vehicle [a] computer system [, each said feed delivery vehicle computer system being installed onboard each said feed delivery vehicle and] transportable to each said animal pen in said feedlot and having a storage [means] mechanism for storing an assigned feed load, and a feed metering [means] mechanism for [metering] measuring the actual amount of feed ration delivered to the feedbunks associated with said [specified sequence of animal pens] feeding route, and a data [producing means] generation mechanism for producing said feed ration dispensed data indicative of the actual amount of feed ration delivered to said feedbunks, each said feed delivery vehicle computer system [being operatable by a feed delivery vehicle operator assigned to said feed delivery vehicle and] having [means] mechanisms for receiving, storing and displaying said feed ration delivery data provided from said feedbunk reading computer system and [means] a mechanism for receiving said feed ration dispensed data produced from said metering [means] mechanism aboard said feed delivery vehicle;

a feedmill computer system, installed at a feedmill in said feedlot and having [means] mechanisms for receiving, storing and displaying said feed ration delivery data produced from said feedbunk reading computer system;

a feedlot management computer system [, installed aboard a feedlot management vehicle team], for receiving, storing and displaying said feed ration delivery data, said feed ration dispensed data and said animal health data, for use by a feedlot manager of said feedlot;

a digital data communications system integrated with said feedlot computer network, for transferring digital data files among said feedbunk reading computer system, said feedmill computer system, said plurality of feed delivery vehicle computer systems, said feedlot management computer system and said feedmill computer system, wherein said digital data files

0972-011 2 09/044,426

[contain] include any of said feed ration deliver data, said animal health data and said feed ration dispensed data; and

a database for maintaining information representative of a model of said feedlot and objects contained therein, each said feed delivery computer system [installed on-board each said plurality of feed delivery vehicles, includes] including a [subsystem] mechanism for viewing [an aspect] at least a portion of said model maintained in said database, each feed delivery computer system also including a vehicle information acquisition [means] mechanism for acquiring vehicle information regarding (i) the position of said feed delivery vehicle relative to a first prespecified coordinate referenced frame, and/or (ii) the state of operation of said feed delivery vehicle and information to said database to specify in the position and/or the state of operation of said feed delivery vehicle represented within said model of said feedlot.

2. The [feedlot] computer network [installation] of claim 1, wherein said vehicle information acquisition [means] mechanism comprises a satellite-based global positioning system, and said database is [periodically up-dated] repeatedly updated using said vehicle information obtained from said satellite-based global positioning system.

3. The [feedlot] computer network [installation] of claim 2, [which] further [comprises] comprising an animal information acquisition [means] mechanism for acquiring animal information regarding at least one of: (a) the position of animals in said feedlot relative to [second] said prespecified coordinate reference frame, and [/or] (b) the body-temperature of said animals, [so] such that said feedlot model reflects at least one of the position and [/or] body-temperature of said animals.

4. The [feedlot] computer network [installation] of claim 1, wherein said [subsystem onboard each said] feed delivery vehicle computer system is coupled to [comprises] a stereoscopic display subsystem which permits the driver to stereoscopically view any aspect of said model, including the driver's vehicle as it is being navigated through the feedlot during feedlot operations.

5. The [feedlot] computer network [installation] of claim 4, wherein each said feed delivery

vehicle is remotely controlled through the feedlot by an operator using a remotely situated workstation.

6. The [feedlot] computer network [installation] of claim 5, wherein each said feed delivery vehicle is equipped with [stereoscopes] a stereoscopic vision subsystem having a field of view along the navigational course of said feedlot vehicle.

7. The [feedlot] computer network [installation] of claim 6, wherein said database is maintained aboard an Internet server operably associated with an Internet-based digital communications network[, with which each said subsystem is in communications network, with which each said subsystem is in communication].

8. The [feedlot] computer network [installation] of claim 6, wherein a replica of said database is maintained aboard each said feedlot vehicle computer system.

9. The [feedlot] computer network [installation] of claim 3, wherein [said subsystem] the feedlot vehicle computer system further comprises a data retrieval mechanism for ascertaining [can be used to ascertain] both vehicle and animal [infor-mation] information reflected in said model of the feedlot.

10. The [feedlot] computer network [installation] of claim 1, which further comprises at least one workstation for viewing said model of said feedlot during feedlot operations.

11. The [feedlot] computer network [installation] of claim 1, which further comprises at least one workstation for viewing said model of a feedlot vehicle in said feedlot and remotely navigating said [feed-lot] feedlot vehicle along a course in said feedlot.

12. An animal feedlot management system, [which comprises] comprising:
a plurality of feedlot [vehicles, each employing an on-board] vehicle computer systems
which each include[s]:

a communications mechanism for communicating with a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration delivery data, a feedmill computer system, and a feedlot management computer system, [a digital data communications system integrated with said feedlot computer network,]

a feedlot [modeling] modeling mechanism [subsystem] for maintaining a geometrical database containing a geometrical model of the feedlot and objects contained therein
a coordinate acquisition [subsystem] mechanism for acquiring coordinate information specifying the position of the feedlot vehicle relative to a [coordinate] reference coordinate system [symbolically embedded] defined within the feedlot, and

a geometrical database processor for processing information in said geometrical database using said coordinate information in order to update said geometrical [mode] model.

13. A computer-implemented method of animal feedlot management [system for installation in an animal feedlot], the method comprising the steps of:

- (a) providing a feedlot computer network comprised of a feedbunk reading computer system, a means for producing, storing and displaying feed ration deliver data, a feedmill computer system, and a feedlot management computer system, [a digital data communications system integrated with said feedlot computer network];
- (b) providing a feedlot vehicle associated with [an on-board] a portable computer system in communication with said feedlot computer network, said portable [on-board] computer system using real-time VR [modeling] modeling and coordinate acquisition techniques in order to maintain a 3-D geometrical model of said feedlot and objects therein including said feedlot vehicle; and
- (c) navigating said feedlot vehicle while viewing [an aspect] at least a portion of said feedlot model from within said feedlot vehicle.